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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,588	06/08/2000	Akira Kitamura	1197-00	1857

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IP DEPARTMENT OF PIPER RUDNICK LLP  
ONE LIBERTY PLACE, SUITE 4900  
1650 MARKET ST  
PHILADELPHIA, PA 19103

EXAMINER

DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

v 16

<b>Office Action Summary</b>	<b>Application No.</b> 09/589,588	<b>Applicant(s)</b> KITAMURA ET AL.	
	<b>Examiner</b> Thuan D. Dang	<b>Art Unit</b> 1764	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5,6 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is non-sense since it is unclear why the material having a non-aromatic compound content of 1% by weight or less has a toluene or xylene content than lower than the equilibrium of toluene and/or xylene in **itself**.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 5, 6, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al (5,952,535) alternatively in consideration with the admitted art disclosed in the specification of this application.

King discloses a process of transalkylation (selected species) comprising contacting a starting material containing C<sub>9</sub>+ aromatics and benzene and a very minor amount of non-aromatic compounds, namely 0.74 (**mole %**) (not including benzene) in the presence of hydrogen and a catalyst containing MOR and 0.25 wt% of a metal such as Re to convert benzene and other aromatics to a product containing C<sub>7-8</sub> aromatics (the abstract; col. 3, lines 7-30; col. 4, lines 25-49; col. 8, lines 20-35).

The examiner notes that while applicants claim using a starting feed containing at least 1% by weight which is distilled to reduce its content of non-aromatics in the feed of 1 % by weight or less (see the above 112 rejection), King discloses using a feed a very minor amount of non-aromatic compounds, namely 0.74 % by **mole** (not including benzene) (see the entire patent for details).

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The examiner cannot decide if 0.74 % by mole of non-aromatic is less than 1% by weight in the King feed or not. However, the examiner believes that if this weight amount were greater than 1 %, it would be very close to it.

Assuming arguendo that 0.74 % by mole of non-aromatics in the King feed were greater than 1 wt% in the King feed based on weight, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the King process by using a feed containing less than 1 wt% of non-aromatics or removing this minor amount to less than 1 wt% to arrive at the applicants' claimed process by well-known distillation separation method since it has been established by the patent law that if range of prior art and claimed range do not overlap, obviousness may still exist if the ranges are close enough that one would not expect a difference in properties. *In re Woodruff* 16 USPQ 2d 1934 (Fed. Cir. 1990); *Titanium Metals Corp. V. Banner* 227 USPQ 773 (Fed. Cir. 1985); *In re Allers*, 105 USPQ 233 (CCPA 1955).

As discussed above, the transalkylation feedstock of King requires only a minor amount of non-aromatics and one having ordinary skill in the art has recognized that the benzene fraction extracted from gasoline contains a large amount of non-aromatics (the paragraph bridging pages 2 and 3 of the specification of this application).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the King process by employing the benzene fraction derived from gasoline in the place of the benzene feed in the King process since it is expected that using of any benzene for the transalkylation with other higher aromatics in the King process yields similar results.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made by further modified the King process by removing any non-aromatics from the mixture of benzene and the C9 aromatics by any separation method such as distillation as discussed above to arrive at the applicants' claimed process since the transalkylation feed of King requires only a minor amount of non-aromatics.

Regarding claim 11, King appears to disclose a feed containing a low concentration of xylene.

Regarding claim 12, the temperature and pressure can be found on column 9, lines 10-35.

The ratio of hydrogen and the hydrocarbons can be found on column 9, lines 27-28.

Regarding claims 14 and 15, a review of 112 rejection is necessary.

### ***Response to Arguments***

Applicant's arguments filed 5/24/2004 have been fully considered but they are not persuasive.

The argument that as demonstrated in examples, applicants discovered that lowering the content of non-aromatic compounds by distillation to produce a material having a non-aromatic compound of 1% by weight or less would yield unexpected results such as a lower consumption of hydrogen and a longer life of catalyst is not persuasive since the claimed process is not the process in examples. In exemplified process, the distilled feed contains only 0.1 % by weight of non-aromatic compounds, 1% as recited in the claim. Further, the feed in the claimed process and the exemplified process are also totally different at least, the amount of benzene. Applicants are reminded that it has been held that objective evidence of non-obviousness must be

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commensurate in scope with the claims. Here the claims were of much broader scope the single composition tested and there was no adequate basis for reasonably concluding that the great number and variety of compositions included in the claims would behave in the same manner as the single tested composition. *In re Lindner*, 457 F2d 506; 173 USPQ 356 (CCPA 1972).

The argument that King failed to have any appreciation for this claimed aspect of the invention "lowering the content of the non-aromatic compounds" of the crude feed by distillation before the reaction is not persuasive since the King process uses a feed having a content of non-aromatic compound less than 1% by mole (see the above rejection). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made by further modified the King process by removing any non-aromatics from the mixture of benzene and the C9 aromatics by any separation method such as distillation as discussed above to arrive at the applicants' claimed process since the transalkylation feed of King requires only a minor amount of non-aromatics.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

09589588.20040728  
July 28, 2004

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written in a cursive style.